What is claimed is:

1. A reference vibration generator comprising:

an amplifier for amplifying an input outside signal;

vibration means for performing nonlinear limit cycle vibration and transmitting a part of an output as a transmission output; and

input means for superimposing the outside signal amplified by the amplifier with an output signal of the vibration means in which the transmission output is subtracted, and inputting them into the vibration means.

2. The reference vibration generator, as claimed in claim 1, wherein the vibration means includes: a limit cycle vibration circuit which performs nonlinear limit cycle vibration and outputs an output signal; and an subtracter which outputs a signal obtained by subtracting a desired signal from the output signal output as a result of the nonlinear limit cycle vibration.

3. The reference vibration generator, as claimed in claim 1, wherein the input means includes an adder which superimposes the outside signal amplified by the amplifier with the output signal from the vibration means in which the transmission output is subtracted.

4. A mutual synchronization system for reference vibration generators, wherein

a plurality of reference vibration generators are

arranged distributively, each of which includes: an amplifier for amplifying an input outside signal; vibration means for performing nonlinear limit cycle vibration and transmitting a part of an output as a transmission output; and input means for superimposing the outside signal amplified by the amplifier with an output signal of the vibration means in which the transmission output is subtracted, and inputting them into the vibration means; and

the vibration means of each reference vibration generator has a function of performing mutual synchronization among the plurality of reference vibration generators by inputting at least a part of outputs from itself and from other reference vibration generators as a received input.

5. A mutual synchronization method for reference vibration generators comprising:

a first step of performing nonlinear limit cycle vibration and transmitting a part of an output to an outside as a transmission output;

a second step of superimposing an amplified outside signal with an output signal by the limit cycle vibration in which the transmission output is subtracted, and inputting superimposed signals as an input signal of the nonlinear limit cycle vibration; and

a third step of inputting at least a part of outputs from a plurality of reference vibration generators arranged distributively as a received input to thereby perform mutual synchronization among the plurality of reference vibration generators.

6. The mutual synchronization method for reference vibration generators, as claimed in claim 5, comprising, amplifying or attenuating the received input and inputting it.

7. The mutual synchronization method for reference vibration generators, as claimed in claim 5 or 6, wherein basic frequencies of limit cycle vibration in at least two of the reference vibration generators are different to each other.

8. The mutual synchronization method for reference vibration generators, as claimed in claim 5 or 6, comprising, adjusting a period of realizing mutual synchronization among the plurality of reference vibration generators by changing an amplification factor or an attenuation factor for amplifying or attenuating the received input.

9. The mutual synchronization method for reference vibration generators, as claimed in any one of claims 5 to 8, wherein amplification factors or attenuation factors for amplifying or attenuating the received input are different

to each other.

10. The mutual synchronization method for reference vibration generators, as claimed in any one of claims 5 to 9, comprising, performing nonlinear limit cycle vibration of different types to each other as the limit cycle vibration.

11. The mutual synchronization method for reference vibration generators, as claimed in any one of claims 5 to 10, wherein the output is an electromagnetic wave, an acoustic wave or an AC electric signal.